MULTIMEDIA UNIVERSITY

STUDENT ID NO

MULTIMEDIA UNIVERSITY

FINAL EXAMINATION

TRIMESTER 2, 2019/2020

DDB5321 DATABASE SYSTEMS

(Diploma in I.T)

05 MARCH 2020
9:00 a.m – 11.00 a.m
(2 Hours)

INSTRUCTIONS TO STUDENTS:

1. This question paper consists of **4** pages.
2. Answer **ALL** questions.
3. Write your answers in the answer booklet provided.

Structured Questions, 4 Questions (Total: 40 Marks)
Instruction: *Answer ALL the questions in the Answer Booklet provided.*

Question 1 (10 Marks)

MMU Cnergy company has asked you to develop a system so that they could record the events requested by their customers. The business rules of the company are described in the passage shown below.

A customer needs to register themselves if they want to book an event. The customer's name, contact number, email address, address, city, postcode and state must be recorded in the system. A customer can request many event but an event is associated to one customer only. The event name, date, number of pax, location, theme and cost will be recorded. Each event belongs to one category such as birthday, wedding, engagement, baby shower, etc. One event can fall under one and only one category but one category may have many events. The category name and description must be stored in the system.

For each event, the customers have an option to have food catered for it. Not all customers will require this. Each event may have many food. Each food is associated with many events. Food details such as name, description and cost must be saved. The customers can add remarks for the food that they order such as having less sugar, less spicy, etc.

Based on the situation given above, draw a complete Entity Relationship Diagram using the **Crow's Foot** notation which includes:

i. All entities and attributes
ii. Relationships
iii. Connectivity and relationship participation
iv. Primary and foreign keys

Question 2 (10 Marks)

Continued.....

Write the SQL commands based on the tables given below.

Customer table

Cust_id	Cust_name	Cust_email	Cust_age	Cust_gender	Cust_state
C01	TinaGaran	tinagaran@gmail.com	23	Male	Johor
C02	Ong Zi Jian	zijian@mail.com	26	Male	Melaka
C03	Nur Liyana	liyana@icloud.com	21	Female	Pahang
C04	Hau Wan	wanseng@hotmail.com	28	Male	Johor
C05	Surenthira	surenthiran@outlook,com	22	Male	Melaka
C06	Zulfaqqar	zulfaqqar@yahoo.com	31	Male	Pahang
C07	Tan Min	minlin@aol.com	29	Female	Selangor

Games Table

Game_id	Game_name	Game_Type	Price
G01	Roblox	T1	160
G02	Minecraft	T2	145
G03	Tetris	T4	129
G04	Dota 2	T1	158
G05	Broken Age	T3	135

Type Table

Type_id	Type_name
T1	MMO
T2	Action
T3	Adventure
T4	Puzzle

Order table

Ord_id	Ord_date	Cust_id	Games_id	Qty
ORD01	2019-01-19	C01	G03	2
ORD02	2019-02-20	C02	G02	1
ORD03	2019-02-21	C03	G04	14
ORD04	2019-03-22	C04	G04	3
ORD05	2019-04-23	C05	G05	10
ORD06	2019-04-24	C06	G03	2
ORD07	2019-06-25	C02	G01	8
ORD08	2019-07-16	C04	G05	4
ORD09	2019-08-20	C03	G03	2
ORD10	2019-09-12	C01	G01	4

Continued.....

a) Display the customer id, customer name and gender that age less than 25 years old. (1 Mark)

Cust_id	Cust_name	Cust_age
C01	TinaGaran	23
C03	Nur Liyana	21
C05	Surenthiran	22

b) Display the list of games which is Action type. (1 Mark)

Game_id	Game_name	Type_name
G02	Minecraft	Action

c) Display the total number of customers according to the state. (1 Mark)

Cust_state	Total
Johor	2
Melaka	2
Pahang	2
Selangor	1

d) Display the total quantity order by each customer. (1.5 Marks)

Cust_id	Cust_name	Total
C01	TinaGaran	6
C02	Ong Zi Jian	9
C03	Nur Liyana	16
C04	Hau Wan Seng	7
C05	Surenthiran	10
C06	Zulfaqqar	2

e) Display the name of customer who do not make any order. (1.5 Marks)

Cust_name
Tan Min Lin

Continued.....

f) Display all information about the game that starts with the letter 'e' or the game price is more than RM150 (1.5 Marks)

Game_id	Game_name	Type_name	Price
G02	Minecraft	Action	160
G04	Dota 2	T1	158
G05	Broken Age	T3	135

g) Display the records from the Order table which has maximum quantity (1.5 Marks)

Ord_id	Ord_date	Cust_id	Games_id	Qty
ORD03	2019-02-21	C03	G04	14

h) Add a new attribute called Cust_title in the Customer table. The length is 5 characters and it may be null. (1 Mark)

Question 3 (10 Marks)

Student Activities Department of Multimedia University manages the list of activities of the student and the data is stored in an Excel spreadsheet. The admin department decides to convert it to a proper database format and requests you to propose a database design for the Student Activities System. Based on the sample record found in APPENDIX A:

Write the relational schema that meets 1NF, 2NF and 3NF requirements.

Question 4 (10 Marks)

a) List **FOUR (4)** factors to consider in purchasing DBMS software. (2 Marks)

b) List and explain **TWO (2)** types of system maintenance activities. (4 Marks)

c) What is association in UML diagram? Explain about it. (2 Marks)

d) List **TWO (2)** database security goals. (2 Marks)

End of Page

APPENDIX A

Sample record for Question 3

Stud_id	Stud_Name	Faculty	Status	Actvity_No	Activity_Name	Court_id	Court_Name	Semester
1001	Muhd Loqman	ENG	Active	A001	Ping Pong	C02	Court B	1
				A003	Futsal	C04	Court D	3
1003	Nurul Fatihah	LAW	Active	A002	Badminton	C03	Court C	3
				A003	Netball	C01	Court A	4
				A005	Squash	C05	Court E	5
1005	Fauzianita	IT	Active	A001	Ping Pong	C02	Court B	1
				A004	Netball	C01	Court A	3